

GEOL 320 - GEOLOGY OF EARTH RESOURCES

Spring 2025

A survey of Earth's material resources (water, minerals, metals, stones and aggregates), energy resources (oil, gas, coal, solar, wind, hydro, geothermal, hydrogen, nuclear), interdependencies and sustainability. Designated a Green Leaf Course (3 credits).

Instructor: Linda Hinnov, Dept. AOES, office: 277B Research Hall; email: lhinnov@gmu.edu

Meetings: Wednesdays, 10.30 am-1.10 pm, online (synchronous) only

Zoom URL: <https://gmu.zoom.us/j/94758863195>

Materials: Online resources, review and research articles posted on the course *Blackboard* website.

Requirements: 3 homework assignments, 1 take-home final exam

Ethics: See <https://oai.gmu.edu/mason-honor-code/full-honor-code-document/> for course policy

Grading: Assignments and final exam each scaled to 100 points and equally weighted (grading scale at end of this document)

DATE	ONLINE LECTURE TOPIC	ASSIGNMENT
Week 01	Wed, Jan 22: Resource Geology-Introduction	
Week 02	Wed, Jan 29: Water	Mon, Jan 27: Hand out HW1
Week 03	Wed, Feb 05: Minerals	
Week 04	Wed, Feb 12: Metals	
Week 05	Wed, Feb 19: Stones and Aggregates	Fri, Feb 21: Hand in HW1
Week 06	Wed, Feb 26: Oil (Petroleum)	Mon, Feb 24: Hand out HW2
Week 07	Wed, Mar 05: Natural Gas	
S P R I N G B R E A K		
Week 08	Wed, Mar 19: Coal	
Week 09	Wed, Mar 26: Nuclear Energy	
Week 10	Wed, Apr 02: Hydrogen and Other Gases	Fri, Apr 4: Hand in HW2
Week 11	Wed, Apr 09: Wind and Solar Resources	Mon, Apr 7: Hand out HW3
Week 12	Wed, Apr 16: Geothermal and Hydro Resources	
Week 13	Wed, Apr 23: Interdependencies	
Week 14	Wed, Apr 30: Sustainability	Fri, May 2: Hand in HW3
TAKE-HOME FINAL EXAM (Hand out Mon, May 5; Hand in Wed, May 14)		

Learning objectives:

Knowledge and Understanding

- Gain knowledge about Earth's material and energy resources, and their geological origins
- Understand the advantages, disadvantages and limitations of non-renewable and renewable resources
- Understand major interdependencies among Earth resources

Analytical Skills and Abilities

- Develop the ability to access reliable information about Earth resources
- Develop skills for solving quantitative problems about Earth resources

Professional Development

- Communicate about the types, distribution, size, and intensity of Earth resources
- Be informed on the natural resource mix portfolios of major world nations
- Advise public and private-interest groups on issues relating to Earth natural resources

Additional information:

Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life,

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Grading Scale (%):

A+	=	98	-	100
A	=	94	-	97
A-	=	90	-	93
B+	=	88	-	89
B	=	84	-	87
B-	=	80	-	83
C+	=	78	-	79
C	=	74	-	77
C-	=	70	-	73
D	=	60	-	69
F	=	0	-	59